

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. (Currently Amended) A chemical mechanical planarization apparatus, comprising:
a polishing pad platen adapted to hold and rotate a polishing pad; and
a slurry arm extending at least a radial distance over the polishing pad platen, the
slurry arm adaptable to pivot over a pivoting axis, and having a nozzle including two or more
slurry ports, and the slurry arm adapted to allow simultaneous deposition through the two
or more slurry ports of either two or more streams of one slurry solution at two or more
different flow rates, or one two or more different slurry solutions onto the polishing pad.
2. (Currently Amended) The apparatus of claim 1, wherein the slurry arm is
adapted to pivot about a point adjacent the polishing pad platen.
3. (Currently Amended) The apparatus of claim 1, wherein ~~the length of the slurry arm
is adapted to be sufficiently long to position the nozzle over a surface of the polishing pad,
and adapted to allow positioning of the nozzle at locations over the polishing pad surface~~
along at least an arc across the polishing pad spanning from one perimeter edge to another
perimeter edge of the polishing pad platen.
4. (Currently Amended) The apparatus of claim 1, wherein ~~the nozzle comprises a
plurality of slurry ports adaptable to provide different slurry solutions~~ the slurry arm is further
adapted to allow deposition through the two or more slurry ports, different concentrations of
the two or more different slurry solutions.
5. (Currently Amended) The apparatus of claim [[4]]-1, wherein the two or more
different slurry solutions comprise at least a selected one of a chemical etchant slurry
solution, and another adapted to provide an abrasive slurry solution.

6. (Currently Amended) The apparatus of claim 1, wherein the ~~nozzle comprises one slurry arm~~ comprises a length adapted to allow positioning of the nozzle at locations over the polishing pad surface ~~or more slurry ports adaptable to provide one or more slurry solutions at one or more flow rates.~~

7. (Currently Amended) The apparatus of claim 1, wherein the slurry arm is controllable to concentrate ~~a~~ either the slurry solution or the two or more slurry solutions on a target area of the polishing pad.

8. (Currently Amended) A method for substrate surface planarization, comprising:
holding and rotating a polishing pad;
holding and rotating a substrate complementary to the rotating polishing pad;
extending a slurry arm at least a radial distance over the polishing pad;
generating a slurry film from simultaneous deposition of either two or more streams of one slurry solution at two or more different flow rates, or two or more different slurry solutions; and
pivoting the arm about a pivoting axis to deposit ~~a~~ the slurry film onto the polishing pad.

9. (Original) The method of claim 8, further comprising adjusting a rotational velocity of the pivoting of the slurry arm to maintain a uniformity of the slurry film being deposited.

10. (Original) The method of claim 9, wherein said adjusting comprises adjusting the rotational velocity of the slurry arm with respect to a rotational velocity of the polishing pad.

11. (Original) The method of claim 10, wherein said adjusting further comprises adjusting the rotational velocity of the slurry arm with respect an anticipated radial position of the substrate.

12. (Original) The method of claim 9, wherein said adjusting comprises adjusting the rotational velocity of the slurry arm with respect an anticipated radial position of the substrate.

13. (Currently Amended) The method of claim 8, further comprising controlling ~~one or more nozzles of the slurry arm to deposit one or more slurry solution onto the polishing pad, at one or more flow rates~~the slurry arm to deposit through the two or more ports, different concentrations of the two or more different slurry solutions.

14. (Currently Amended) A chemical mechanical planarization (CMP) system, comprising:

a CMP arrangement having

a polishing pad platen adapted to hold and rotate a polishing pad, and

a slurry arm extending at least a radial distance over the polishing pad platen, the slurry arm being pivotable about a pivot axis, and having at least a nozzle including two or more slurry ports, and the slurry arm adapted to allow simultaneous deposition at least one through the two or more slurry ports of either two or more streams of one slurry solution at two or more different flow rates, or two or more different slurry solutions onto the polishing pad; and

a control system coupled to the slurry arm, and adapted to control the slurry arm to pivot about the pivot axis and position the nozzle over the polishing pad, the control system in communication with a substrate holder adapted to hold a substrate to be planarized by the polishing pad, for coordinated engagement with the polishing pad in view of the substrate holder.

15. (Original) The system of claim 14, wherein the control system is adapted to control the slurry arm to pivot about a point adjacent the polishing pad platen.

16. (Currently Amended) The system of claim 14, wherein the control system is adapted to control ~~different slurry ports of the nozzle to provide one or more slurry solutions at one~~

the two or more flow rates of the one different slurry solution by controlling the two or more slurry ports.

17. (Currently Amended) The system of claim ~~46~~14, wherein the control system is adapted to control the slurry arm to allow deposition through the~~different- two or more~~ slurry ports of the nozzle to provide the two or more different slurry ports, different concentrations of the two or more different slurry solutions~~at different flow rates~~.

18. (Currently Amended) The system of claim 14, wherein the control system is adapted to control the slurry arm to concentrate ~~a~~either the slurry solution or the two or more slurry solutions on a target area of the polishing pad.